Joint Test & Evaluation Program Highlights

August 2004

The congressional concerns that initiated the JT&E program are especially valid today. Effective joint operations are no longer the aggregate of the Services' stand-alone warfighting capabilities. Combatant commanders rely on the integration of Service capabilities, a task that the Services cannot accomplish individually. With its rigorous methodology, organizational flexibility, and responsiveness, the JT&E program is uniquely prepared to assist decision makers in solving joint issues, as exemplified on this cover, where a Navy-led joint test improved the employment of unmanned aerial vehicles by warfighters performing time-sensitive fire support missions.

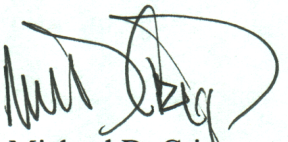
Cover Photo: Unmanned aerial vehicle video image of Joint Direct Attack Munition (JDAM) delivery to target during the Joint Unmanned Aerial Vehicle in Time-Sensitive Operations (JUAV-TSO) Joint Test and Evaluation Mini-Test 2

Foreword

The Director, Operational Test and Evaluation (DOT&E) initiated the plan of re-engineering the JT&E Program to improve the way the JT&E process responds to real-world emergent needs and requirements of our warfighters. This JT&E transformation streamlined structure enables more direct involvement by the warfighter and provides for the rapid development and fielding of joint test products and new capabilities. These products have a positive impact on existing doctrine and procedures and benefit both the warfighter and acquisition communities.

The enclosed report highlights the recent accomplishments of the JT&E program and captures the results obtained by our on-going tests and their real-time contributions to recent, current, and future combat operations.

As we have embraced the changes to the program during this past year and have witnessed the resulting improvements, we look forward to providing even better support to the warfighter when operations are critical to our national defense.



Michael D. Crisp
Deputy Director
Air Warfare
Operational Test and Evaluation
Office of the Secretary of Defense

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This past year has seen many challenges to our military. Joint operations continue to expand and become a vital and effective option for joint force commanders to leverage the strengths of each Service against a common threat. In order to keep pace with this dynamic world environment, the JT&E program restructured its processes to enable joint tests to accelerate testing and quickly deliver to the warfighter key products and solutions to improve joint operations and combat effectiveness.

The basic tenets of the JT&E program remain unchanged. The JT&E mission is to provide quantitative information used for analyses of joint military capabilities and to develop potential options for increasing military effectiveness through the use of rigorous, unbiased testing. The JT&E transformation allows for the acceleration of testing and delivery of findings to the warfighter while still meeting the JT&E mission.

The JT&E transformation includes the introduction of Quick Reaction Tests (QRTs) that:

- Quickly address specific and focused warfighter questions or issues within scope of JT&E program purpose.
- Have accelerated review, approval, and execution timelines.
- Are executed within 6-12 months (Nomination to Final Report).

In addition to the introduction of QRTs, the JT&E has made other changes to streamline the existing processes. JT&E tests now:

- Have a shortened duration; feasibility studies have been shortened to 7 months; tests have been shortened to 3 years maximum (Charter-to-Closedown).
- Transition knowledge, expertise, and products to the warfighter during test execution when enhancements are clearly validated early in testing.

Shortly after introduction of these new processes, the JT&E program directed the first QRT.

The ***Joint Survivability (JSURV)*** QRT investigated casualty-producing incidents involving U.S. forces in Iraq and identified the factors that caused the casualties. Once JSURV identified these factors, the JSURV team recommended improvements to TTPs and materiel and assisted U.S. Central Command (CENTCOM), U.S. Special Operations Command (SOCOM), and the Services in fielding those recommendations. These recommendations included development of combat convoy handbooks, graphic training aids, use of body armor, and vehicle fire suppression technologies. Most of these improvements have been accepted and are currently used in theater. JSURV began testing in August 2003 and completed its work in March 2004.

The ***Joint Shipboard Weapons and Ordnance Quick Reaction Test (JSWORD)*** QRT was directed in May 2004. The JSWORD QRT seeks to develop a process for certification of existing non-Naval weapons systems for shipboard use. The proof-of-concept for the process will be the 2.75" Folding Fin Aerial Rocket (FFAR) versions used by Special Operations and Army assault helicopters. The process will allow certification of specific non-Naval weapons systems for training and operational use without the requirement for a one-time waiver. The test is scheduled for a ten-month period.

The JSWORD QRT will allow certification of specific non-Naval weapons systems to be employed on Naval ships without one-time waivers.

Accomplishments

JT&E Participates in Combined Joint Task Force Exercise 04-2 (CJTFEX 04-2)

The JT&E Program Office coordinated among all participating JT&Es at CJTFEX 04-2 to capitalize on program synergies, avoid duplication of effort and resources, and ensure the best employment of personnel and materiel.

Four JT&E programs participated in the event:

Joint Command, Control, Intelligence, Surveillance, and Reconnaissance JT&E (JC2ISR)

- Provided mission area analysis for Time-Sensitive Targeting (TST) to the exercise

Joint Cruise Missile Defense JT&E (JCMD)

- Provided a cruise missile emulator to the exercise
- Conducted Cruise Missile Defense mission area concepts of operation

Joint Global Positioning System Combat Effectiveness JT&E (JGPSCE)

- Provided live GPS Electronic Warfare (EW) play
- Assessed the impact of GPS EW on the Joint Force Air Component Commander, and the ability of ISR sensors to detect GPS jamming

Joint Methodology to Assess Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance Architectures JT&E (JMACA)

- Provided and validated methods to rapidly identify C4ISR deficiencies and propose appropriate solutions

JT&E Contributes to Operation IRAQI FREEDOM

- JCMD provided CENTCOM quick-turn analysis on CM shots during OIF

- JCAS deployed military in theater to observe and provide advice on joint CAS. Provided a quick reaction report
- JBDA executed contingency testing and applied 4 enhancements into BDA in theater procedures
- JUAV deployed into the CAOC to assist in UAV TTP development
- JLOG/PE provided on-going assistance to CENTCOM J4 staff in improving the process of acquiring and assimilating logistics information
- JC2ISR deployed to assist in all phases of Time Sensitive Targeting
- JSURV-QRT improved convoy survivability for current in theater operations

Stand-up of the Joint Test Support Cell (JTSC)

The JT&E program office has opened a facility in Suffolk, VA that will provide technical assistance to QRTs and new Feasibility Studies. This expertise will accelerate the planning and execution process for all new tests.

Current Tests

The ***Joint Cruise Missile Defense (JCMD)*** JT&E improves the capability of U.S. Joint Integrated Air Defense Systems (JIADS) to defeat a cruise missile attack. JCMD recently conducted the largest JIAD cruise missile test to-date and developed and executed an operator-in-the-loop simulation capability. The Simulation integrated JIADS systems at eight locations across the U.S. for this test event. Operators from the four Services planned the Blue Force defense design and manned the JIADS systems during the course of this extensive test. The architecture developed for the Simulation Test has potential follow-on use as a testing and training tool. In addition, JCMD just conducted a second Field Test executed in conjunction with CJTFEX 04-2. JCMD flew over 113 cruise missile surrogate sorties, giving the warfighter the opportunity to train against the cruise missile threat in a live-fly environment.

JCMD is continuing to develop warfighter support products that will meet future training, testing, and experimentation requirements. Additionally, JCMD is coordinating a Transformation Change Plan with JFCOM in an effort to ensure that the capabilities JCMD developed and tested are successfully transitioned to the warfighter.

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The ***Joint Command and Control, Intelligence, Surveillance, and Reconnaissance (JC2ISR)*** JT&E improves the operational capability of

warfighters to employ joint intelligence, surveillance, and reconnaissance (ISR) collection platforms and sensors to conduct time-sensitive targeting (TST). The JT&E test premise is that the TST mission can be improved by integrating ISR and operations.

Previous JC2ISR testing produced recommendations for enhancements. JC2ISR tested these enhancements in conjunction with CJTFEX 04-2. JC2ISR evaluated the TST Joint Tactical Tasks (JTTs) and developed a new Joint TST Universal Joint Task List (UJTL) for future exercises. JC2ISR incorporated intelligence process training and integrate Distributed Common Ground/Surface System (DCGS) Family of Systems (FOS) into the CJTFEX 04-2 architecture and is currently evaluating test results to determine if an interoperable and integrated DCGS FOS can enhance TST operations.

JC2ISR test products will provide warfighters with a baseline effectiveness evaluation of current C2ISR capabilities and limitations, and will quantify the effect of specific C2ISR enhancements on the TST mission area. JC2ISR has already developed an ISR/TST operations integration process model as a tool to evaluate enhancements, and has actively participated with the Air Land Sea Application Center to draft TST multi-Service TTP documents.

The ***Joint Methodology to Assess C4ISR Architecture (JMACA)*** JT&E provides tools and procedures to enable warfighters to diagnose C4ISR deficiencies such as interoperability failures and shortfalls.

JMACA is validating a set of tools and procedures by analyzing and testing Joint Task Force (JTF) C4ISR architectures obtained from real-world events and scheduled exercises.

JMACA recently conducted testing in conjunction with CJTFEX 04-2. The test conducted a re-assessment of CJTFEX 04-2architecture in less than three days providing:

- Updated end-to-end information paths
- Interoperability risk associated to each functional thread and system

JMACA will use analysis and "lessons learned" from testing to further refine the methodology in preparation for the third and final validation test.

The ***Joint Unmanned Aerial Vehicle in Time-Sensitive Operations (JUAV-TSO)*** JT&E continues to improve employment of UAVs by warfighters performing time-sensitive air interdiction, fire support, and personnel recovery missions.

JUAV-TSO conducted Mini-Test 2 (MT-2) in November 2003 on the Fallon Range Training Complex in northwestern Nevada. Air Force B-1B aircraft from the 34th Bomber Squadron, Ellsworth AFB, South Dakota, participated. MT-2 evaluated the integration of unmanned aerial vehicles (UAV) into air interdiction missions.

JUAV-TSO met with representatives from the JCAS JTT in December 2003 for a Mini-Test 1 (MT-1) Collaboration Meeting. JUAV-TSO and JCAS subject matter experts (SME) verified MT-1

findings and developed a list of recommended changes to Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support*.

In addition, JUAV SMEs participated in a Global Hawk Air Force TTP 3-1 development conference in January 2004 as the first opportunity for the JUAV-TSO team to directly influence the development of UAV TTP.

The ***Joint Logistics/Planning Enhancement (JLOG/PE)*** JT&E identifies, tests, evaluates, and recommends enhancements to joint logistics information and management processes. JLOG/PE will analyze data from joint exercises, in-theater operations, and dedicated tests to improve Joint Force Commanders abilities to assess, plan, and manage the sustainment of in-theater forces. JLOG/PE completed its first series of baseline subtests in September 2003 at U.S. Joint Forces Command (JFCOM) and in December 2003 at U.S. Pacific Command (PACOM).

JLOG/PE has also assisted the U.S. Central Command (CENTCOM) J4 staff in improving their process of acquiring and assimilating logistics information to provide a daily status to the CENTCOM leadership for current in-theater activities.

The ***Joint Datalink Information Combat Execution (JDICE)*** JT&E improves the warfighter's battlespace situational awareness by developing joint tactics, techniques, and procedures (JTTPs) that provide critical mission information across multi-platform fielded tactical air and ground data links. JDICE will specifically determine whether the expanded application of Link-16 will improve de-confliction and tactical targeting.

The ***Joint Space Control Operations-Negation (JSCO-N)*** JT&E identifies, evaluates, and documents improvements to the planning and assessment of space control operations. JSCO-N will focus on better synchronization of space control operations with other military operations through the theater Combatant Commander's joint targeting cycle with relevant U.S. Strategic Command (STRATCOM) and Service component operations procedures. JSCO-N is preparing for its first test, Terminal Fury 05, by documenting procedures that have previously been conducted on an ad-hoc basis. The JSCO-N Team's goal is to develop methods and processes for standardizing these procedures, measure their effectiveness, and evaluate them for potential improvements. JSCO-N is actively engaging with organizations working on effects-based planning and assessment tools, non-kinetic effects analysis methods, space situational awareness, and command and control procedures to do collaborative test and make best use of on-going efforts.

The ***Joint Integration and Interoperability of Special Operations (JIISO)*** JT&E will improve the integration and interoperability of special operations forces (SOF) and conventional forces (CF) during the planning and execution of maneuver and fire support coordination. Improving the maneuver and fire support coordination planning and execution processes, and

the supporting system of systems, will enhance the joint force commander's capability to synergistically employ the entire joint force. This improved combat effectiveness will manifest itself in more timely actions, increased opportunities, and a reduced potential for fratricide. The intent is to move from a focus on de-confliction to a synergistic state of synchronization of SOF and CF in current and future military operations.

Test events will be used to validate the effects of enhancements to SOF and CF integration and interoperability in the areas of maneuver and fire support coordination. Risk-reduction laboratory events will be used to validate data collection tools and processes as well as proof and refine proposed enhancements prior to implementation in an exercise environment.

Joint Urban Fires and Effects (JUFE) is a Joint Feasibility Study that proposes to assess, and improve current JTTPs and C3, and provide recommendations to institutionalize and improve joint urban fires. Although the JT&E Senior Advisory Council determined JUFE to be a viable and needed program, insufficient funds were available for charter as a JT&E. However, on April 1, 2004, JFCOM and the JT&E Program Office agreed to continue JUFE as a joint feasibility study based on the recognized need to improve U.S. capability during the conduct of urban warfare.

Joint Fires Coordination Measures (JFCM) is a Joint Feasibility Study that proposes to test and evaluate new JJTPs that are designed to standardize kill box procedures and enable theater commanders to more fully integrate component fires at the operational and tactical levels.

Transitioning Tests

As part of the transformation of the JT&E program, the program office has examined all tests and determined that three current tests are eligible for early off-ramp of their expertise to the warfighter. JCMD, JC2ISR and JUAV have accelerated their transition of products and closedown plans for completion in the second quarter of FY 05.

The ***Joint Global Positioning System Combat Effectiveness (JGPSCE)*** JT&E assesses the impact of global positioning system (GPS) degradation and denial on precision engagement mission effectiveness and system performance due to GPS electronic warfare (EW) and electromagnetic interference. JGPSCE is focused on reconnaissance interdiction missions within a complete sensor-to-shooter kill chain. When field testing discovered potential weapon systems vulnerabilities under conditions of GPS degradation and denial, JGPSCE published quick look test results that provided invaluable and timely information to the warfighter. In November 2003, the Office of the Assistant Secretary of Defense, Networks and Information Integration (OASD/NII) tasked JGPSCE to complete vulnerability assessment reports on the MQ-11 Predator unmanned aerial vehicle (UAV) and the E-8C Joint STARS platforms. The Predator Vulnerability Assessment Report was published in May 2004. JGPSCE's preparation of the Joint STARS Vulnerability Assessment

Report resulted in a Joint STARS Joint Task Force decision to evaluate the Joint STARS Block 20 during JGPSCE's last test event. JGPSCE will publish a single Joint STARS Vulnerability Assessment Report in November 2004 that addresses the Block 10 testing, the Block 20 testing, and the Block 20 testing.

JGPSCE is currently assessing results from the final field test. It will assess the impact of GPS EW on planning and decision-making at the operational level of war. Products from the test will include vulnerability assessment reports on the E-8C Joint STARS Block 20, RC-135V Rivet Joint, and U-2S reconnaissance platforms.

JGPSCE will close in September 2004. The JGPSCE knowledge base and products will be transitioned to the Navigation Warfare Center of Excellence being established as a result of the Navigation Warfare Selected Area Review conducted by OASD/NII.

The ***Joint Close Air Support (JCAS)*** JT&E has improved the operational effectiveness of Joint U.S. Forces conducting close air support (CAS) missions. After completing the requirements of its JT&E charter, JCAS became a Joint Test Team (JTT) for two additional years of activity under the operational control of the JCAS Executive Steering Committee (ESC), with oversight and administration continued under the JT&E program. The JCAS ESC is a chartered activity of the Joint Requirements Oversight Council. The JCAS JTT is responsible for addressing and resolving issues in the JCAS Action Plan as approved by the Commander, U.S. Joint Forces Command (JFCOM). This JT&E will officially transition to USJFCOM by the beginning of FY 05.

While the JCAS JTT was heavily involved during this period in working 2003 Action Plan issues, it also planned, rehearsed, and conducted the primary assessment of the first event in the JFCOM Joint National Training Center Capability (JNTC). The JNTC event directly supports the Secretary of Defense's goal of testing in a joint environment. At the January 2004 JNTC event, "Conduct Close Air Support" was the primary Joint Tactical Task assessed. JCAS authored the Collection Management Plan (CMP) based on its earlier work on the JCAS Critical Task List. The CMP proved invaluable as a tool to identify joint CAS tasks and assess them in a joint environment. JCAS provided results and recommendations for the summary report of the JNTC event. The JCAS JTT was instrumental in the first-time success of the JNTC event. JFCOM has tasked the JCAS JTT to conduct a follow-on horizontal training event, with joint CAS as a primary joint tactical task, at the Joint Readiness Training Center, Ft. Polk, Louisiana.

The ***Joint Battle Damage Assessment (JBDA)*** JT&E is near completion. JBDA's efforts improved BDA processes for United States Forces, Korea (USFK), and joint warfighters around the globe. Over the past four years, JBDA made significant inroads to better training, enhanced TTPs, and improved interoperability in the joint targeting cycle as it relates to combat assessments and BDA. JBDA also provided analysis of the data it collected during the Ulchi Focus Lens 2003

(UFL 03) test of enhanced procedures. Joint warfighters in USFK have already benefited from JBDA products and recognized the benefits. In addition, JBDA is well on the way to bringing its products to other combatant commands and Services. JBDA's focus has been on transitioning test-validated enhanced procedures for the joint BDA process, either as stand-alone products, as improvements to existing doctrine, or as part of a system of record. In February 2004, JBDA provided out-briefs to USFK and its components on its UFL 03 accomplishments and on what products it had provided to assist USFK in improving BDA, combat assessment, and operational effects-based assessments. JBDA feedback will further improve BDA operations on the Korean peninsula.

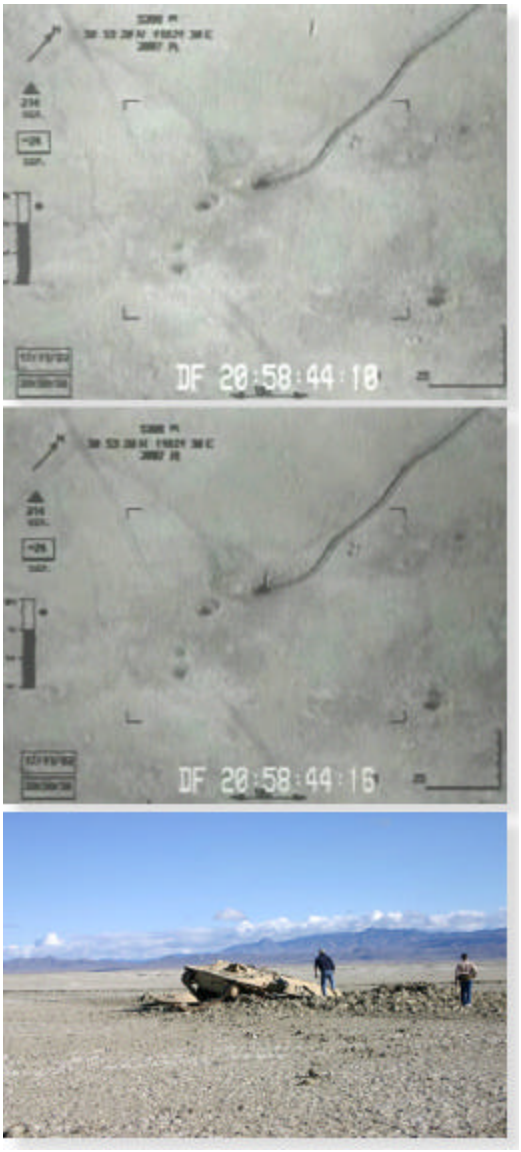
Summary

Senior OSD leaders and warfighting commanders repeatedly express satisfaction with the JT&E program. The Air Component Commander of the Republic of Korea/United States Combined Forces Command stated in September 2003:

> *The JBDA team's dedication and initiatives have been clearly evident since your initial involvement in UFL 01, and your work is making an immediate, positive impact on the warfighters' joint BDA processes in theater.*

The Deputy Assistant Secretary of Defense for Spectrum, Space, Sensors, and Command, Control, and Communications stated in November 2003:

> *JGPSCE's past efforts have been instrumental in the Department's decision-making process and directly contributed to Operation ENDURING FREEDOM and Operation IRAQI FREEDOM successes.*



UAV video image of JDAM delivery to target during JUAV-TSO JT&E Mini-Test-2. JUAV analysts inspect the damage after the strike by an inert weapon.

The JT&E program is presently working to improve combat-important joint

issues, as exemplified in the photos above, where a Navy-led JT&E improved the employment of UAVs by warfighters performing time-sensitive air interdiction, fire support, and personnel recovery missions. These joint issues include GPS vulnerability, close air support effectiveness, land attack cruise missile engagement, and targeting cycle timeliness. With its rigorous methodology, organizational flexibility, and improved responsiveness, the JT&E program is uniquely suited to rapidly provide joint solutions required to meet the emerging challenges faced by our Armed Forces in ensuring our national defense.

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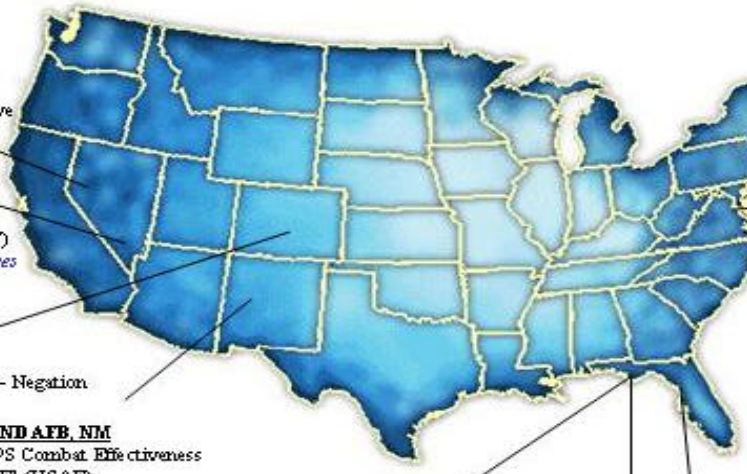
Current JT&E Locations

10 Tests, 2 Joint Feasibility Studies, 1 QRT, 9 Test Locations



NAS FALLON, NV
- Joint UAV for Time- Sensitive Operations [JUAV-TSO] (Navy)

NELLIS AFB, NV
- Joint Data Link Information Combat Execution [JDICE] (USAF)
- *Joint Fires Coordination Measures [JFCM] (USAF)*

SCHRIEVER AFB, CO
- Joint Space Control Operations – Negation [JSCO-N] (USAF)

KIRTLAND AFB, NM
- Joint GPS Combat Effectiveness [JGPSCE] (USAF)

EGLIN AFB, FL
- Joint Cruise Missile Defense [JCMD] (USAF)

HURLBURT FIELD, FL
- Joint Command and Control, Intelligence, Surveillance and Reconnaissance [JC2ISR] (USAF)

TAMPA, FL
- Joint Integration and Interoperability of Special Operations [JIISO] (SOCOM/USMC/JFCOM)

APG, MD
- Joint Logistics Planning Enhancements [JLOG-PE] (Army)

ALEXANDRIA VA
JT&E Program Office

SUFFOLK, VA
- Joint Battle Damage Assessment [JBDA] (Army)
- Joint Methodology to Assess C4ISR Architecture [JMACA] (Navy)
- *Joint Urban Fires and Effects [JUFE] (JFCOM)*
- *Joint Shipboard Weapons and Ordnance [JSWORD] (Navy)*
- JT&E JFCOM Liaison
- Joint Test Support Cell

Legend:
- Joint Test
- *Joint Feasibility Study*
- *Quick Reaction Test*
- JT&E Program Office Support

Joint Test and Evaluation Program

For additional information, please contact:

Joint Test and Evaluation Program Office
4850 Mark Center Drive, 10th Floor
Alexandria, Virginia 22311
Fax: 703-681-4052
Web: http://www.jte.osd.mil

Deputy Director, Air Warfare, DOT&E: Mr. Michael D. Crisp
Phone: 703-692-9929
E-mail: M.Crisp@osd.mil

JT&E Program Manager: Mr. Jim Thompson
Phone: 703-681-4000/4024, extension 129
E-mail: Jim.Thompson@osd.mil

Annual Report Action Officer: Ms. Cynthia Lindberg-Ross
Phone: 703-681-4000/4024, extension 159
E-mail: Cynthia.Lindberg-Ross@osd.mil


JOINT BATTLE DAMAGE ASSESSMENT
JBDA
JOINT TEST & EVALUATION


LOGISTICS
PLANNING
ENHANCEMENTS
JOINT
JT&E


JMACA
Joint Methodology to Assess C4ISR Architecture
JT&E


COMMAND
CONTROL
USA
USN
JC2ISR
USAF
USMC
INTELLIGENCE
RECONNAISSANCE
JTF
SURVEILLANCE


JSURV
JOINT SURVIVABILITY


JOINT UNMANNED AIR VEHICLES JOINT TEST AND EVALUATION
JUAV - JTE


JOINT
TEST AND EVALUATION


JOINT INTEGRATION AND INTEROPERABILITY OF SPECIAL OPERATIONS
JOINT TEST AND EVALUATION


JOINT GPS COMBAT EFFECTIVENESS JT&E
OFFICE OF THE SECRETARY OF DEFENSE


JOINT CRUISE MISSILE DEFENSE
JOINT TEST & EVALUATION-OSD


JOINT SPACE CONTROL OPERATIONS - NEGATION
OFFICE OF THE SECRETARY OF DEFENSE
HEGARE ASTRA ADVERSARIO


OSD JOINT
CLOSE AIR SUPPORT


JOINT DATALINK INFORMATION COMBAT EXECUTION
KNOWLEDGE
US POWER
LETS
JDICE
ROLL